

What is claimed is:

1. A wafer for forming an integrated circuit thereon, the wafer comprising:
  - a main surface on which an integrated circuit is to be formed;
  - a substantially circular contour portion surrounding said main surface;
  - a curved positioning notch formed in said circular contour portion; and
  - connecting portions defined between said circular contour portion and said curved positioning notch, wherein said connecting portions are chamfered in a plane parallel to said main surface.
2. A wafer according to claim 1, wherein the chamfer of each of said connecting portions lies within the range defined by the points of an inscribed circle common to both the circular contour portion and the curved positioning notch, and a radius of each inscribed circle is determined by the following expression:

$$\frac{w - B}{2} \leq r \leq \frac{b^2 - a^2}{2(R - \sqrt{R^2 - b^2})}$$

where

$r$  = radius of the inscribed circle,

$R$  = radius of the wafer,

a = half of a length of an unchamfered portion in a positioning removal portion,  
b = half of a full length of the positioning removal portion before the chamfering,  
W = width of the wafer, and  
B = length of wafer end face portion.

[3. A wafer according to claim 1, wherein at least one of said connecting portions is rectilinearly chamfered in a plane parallel to said main surface.]

4. A process for producing a semiconductor device, comprising the steps of:

preparing a wafer having a main surface, a substantially circular contour portion and a curved positioning notch formed in said circular contour portion, said circular contour portion chamfered in a thickness direction to said main surface;

forming a photoresist film for a photolithographic process on said surface of said wafer; and

forming patterns on said surface of said wafer, wherein connecting portions each defined between said circular contour portion and said curved positioning notch is chamfered in a plane parallel direction to said main surface.

5. A process for producing a semiconductor device according to claim 4, wherein the chamfer of said

connecting portion lies within the range defined by the points of an inscribed circle common to both the circular contour portion and the curved positioning notch.

6. A process for producing a semiconductor device according to claim 5, wherein a radius of said inscribed circle is determined by the following expression:

$$\frac{w-B}{2} \leq r \leq \frac{b^2 - a^2}{2(R - \sqrt{R^2 - b^2})}$$

where

r = radius of the inscribed circle,

R = radius of the wafer,

a = half of a length of an unchamfered portion in a positioning removal portion,

b = half of a full length of the positioning removal portion before the chamfering,

W = width of the wafer, and

B = length of wafer end face portion.

7. A process for producing a semiconductor device, comprising the steps of:

preparing a wafer having a main surface, a substantially circular contour portion, a curved positioning notch formed in said circular contour portion and connecting portions each defined between said circular contour portion and said curved positioning

notch, said circular contour portion and said connecting portions are chamfered in a plane parallel and in a thickness direction to said main surface;

forming a photoresist film for a photolithographic process on said surface of said wafer; and

forming patterns on said surface of said wafer, wherein said connecting portions are curved shape in said main surface and in a plane parallel to said main surface.

8. A process for producing a semiconductor device according to claim 7, further comprising the step of: positioning said wafer by rotating said wafer.

9. A process for producing a semiconductor device according to claim 7, further comprising the step of: positioning said wafer by rotating said wafer in touch with a roller means.

10. A process for producing a semiconductor device according to claim 7, further comprising the step of: positioning said wafer by optical means.

11. A process for producing a semiconductor device according to claim 7, further comprising the step of: transporting said wafer.

12. A process for producing a semiconductor device

according to claim 7, wherein the chamfer of said connecting portion lies within the range defined by the points of an inscribed circle common to both the circular contour portion and the curved positioning notch.

13. A process for producing a semiconductor device according to claim 12, wherein a radius of said inscribed circle is determined by the following expression:

$$\frac{w-B}{2} \leq r \leq \frac{b^2 - a^2}{2(R - \sqrt{R^2 - b^2})}$$

where

r = radius of the inscribed circle,

R = radius of the wafer,

a = half of a length of an unchamfered portion in a positioning removal portion,

b = half of a full length of the positioning removal portion before the chamfering,

W = width of the wafer, and

B = length of wafer end face portion.

*Added*